

GAY 2776

#1
Drawing
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NDA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Cooper et al.**

Serial No.: 09/306,189

Filed: May 6, 1999

For: **METHOD AND APPARATUS
FOR CONVERTING PROGRAMS
AND SOURCE CODE FILES
WRITTEN IN A PROGRAMMING
LANGUAGE TO EQUIVALENT
MARKUP LANGUAGE FILES**

§ Group Art Unit: 2776

§

§ Examiner: **Unknown**

§

§ Attorney Docket No.: **AT9-98-920**

§

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Respectfully submitted,

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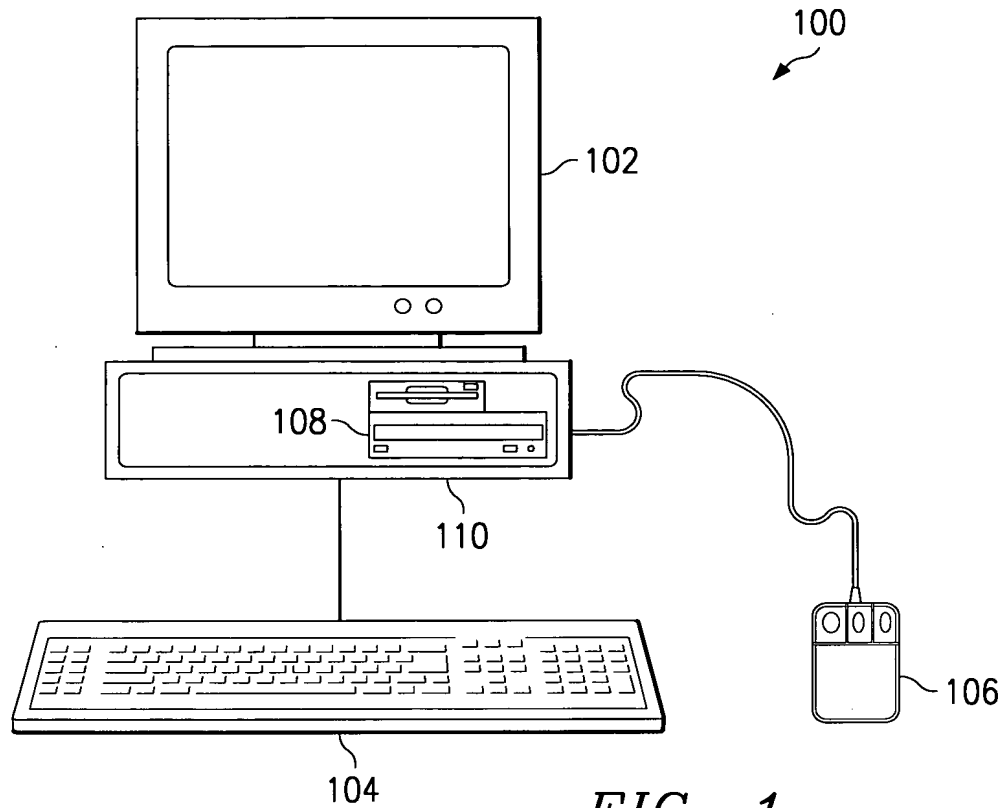


FIG. 1

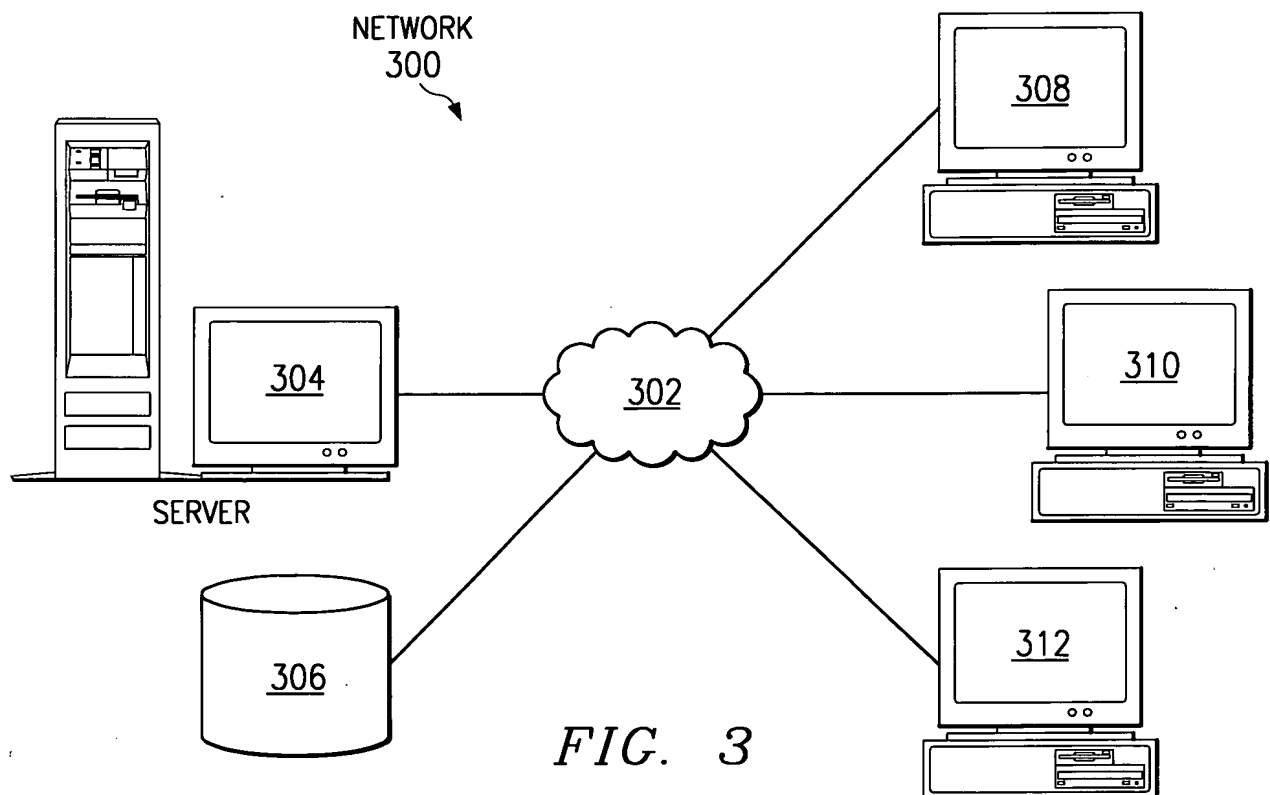


FIG. 3

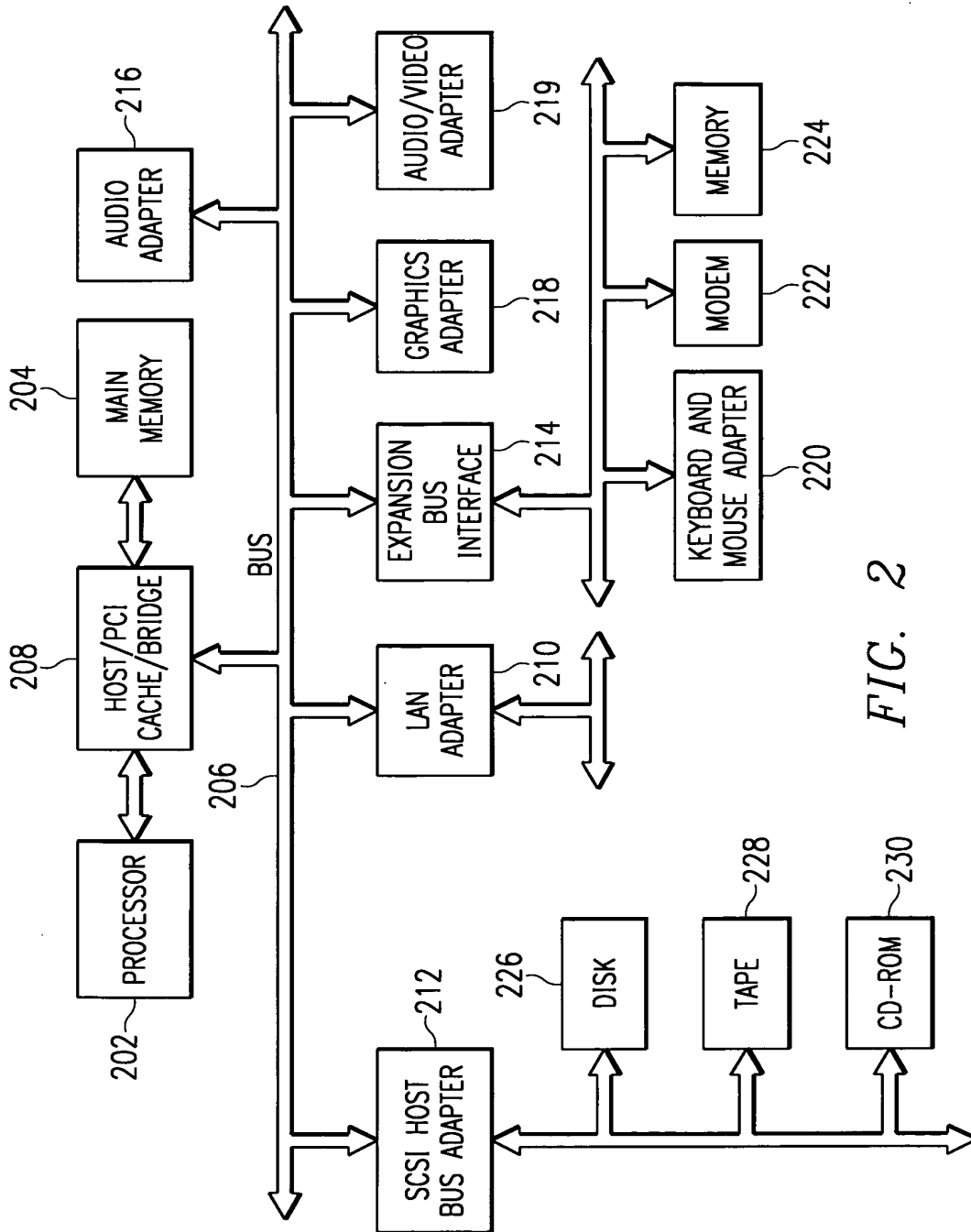
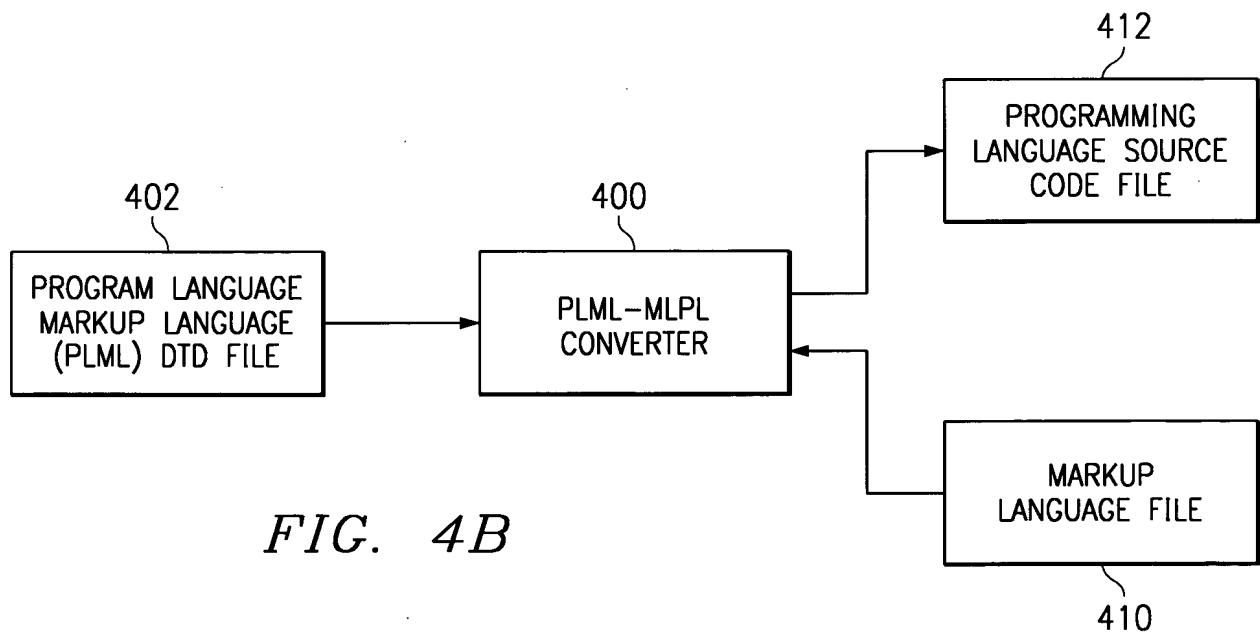
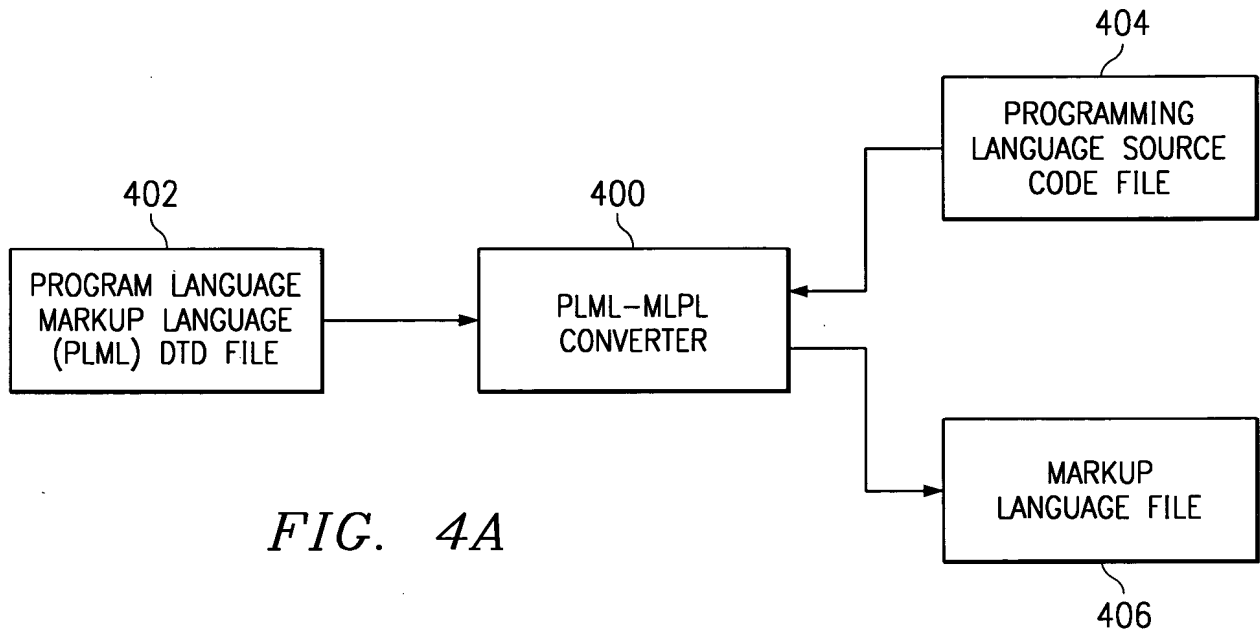


FIG. 2

APPROVED	O.G. FIG.	
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APPROVED	O.G. FIG.	
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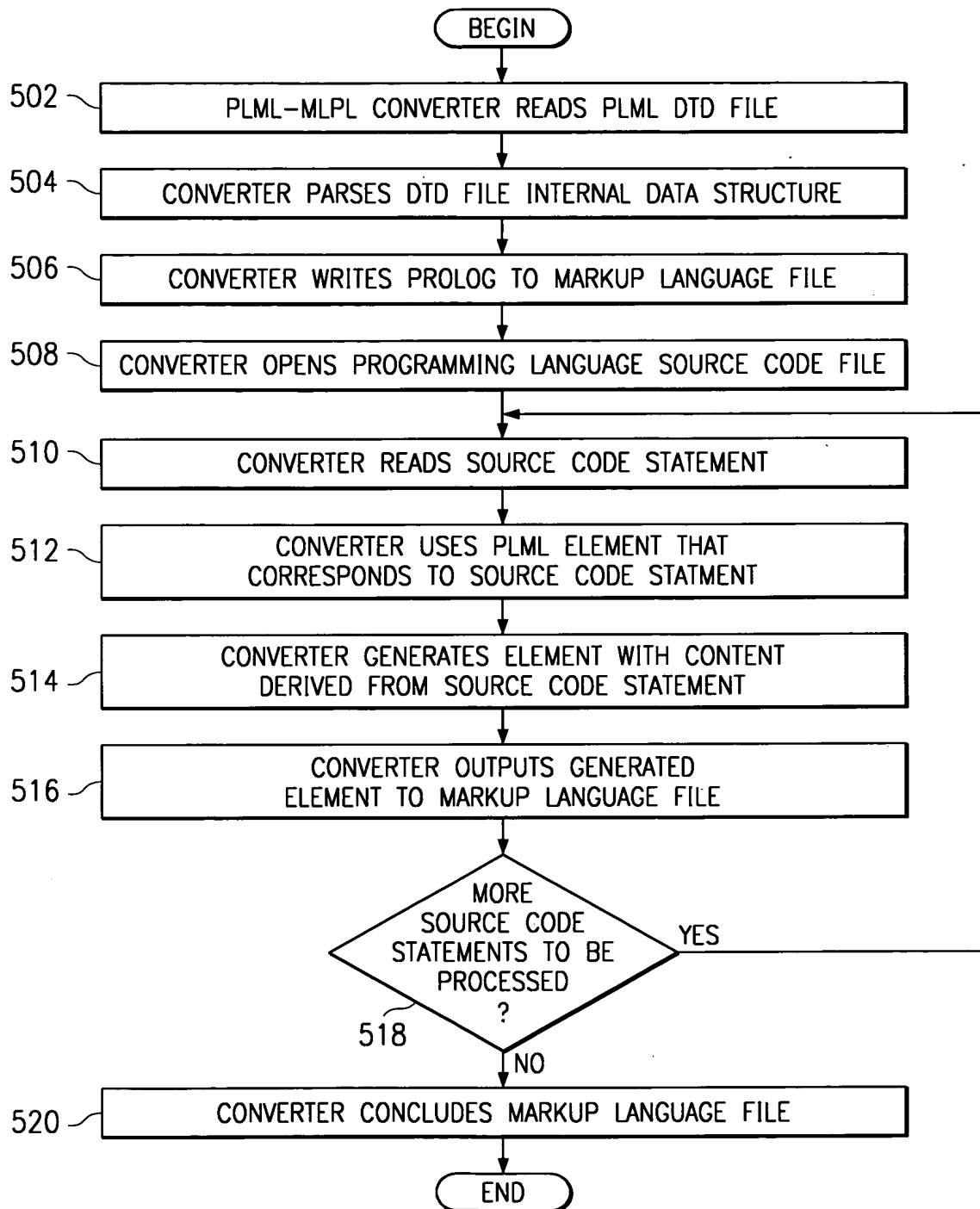


FIG. 5

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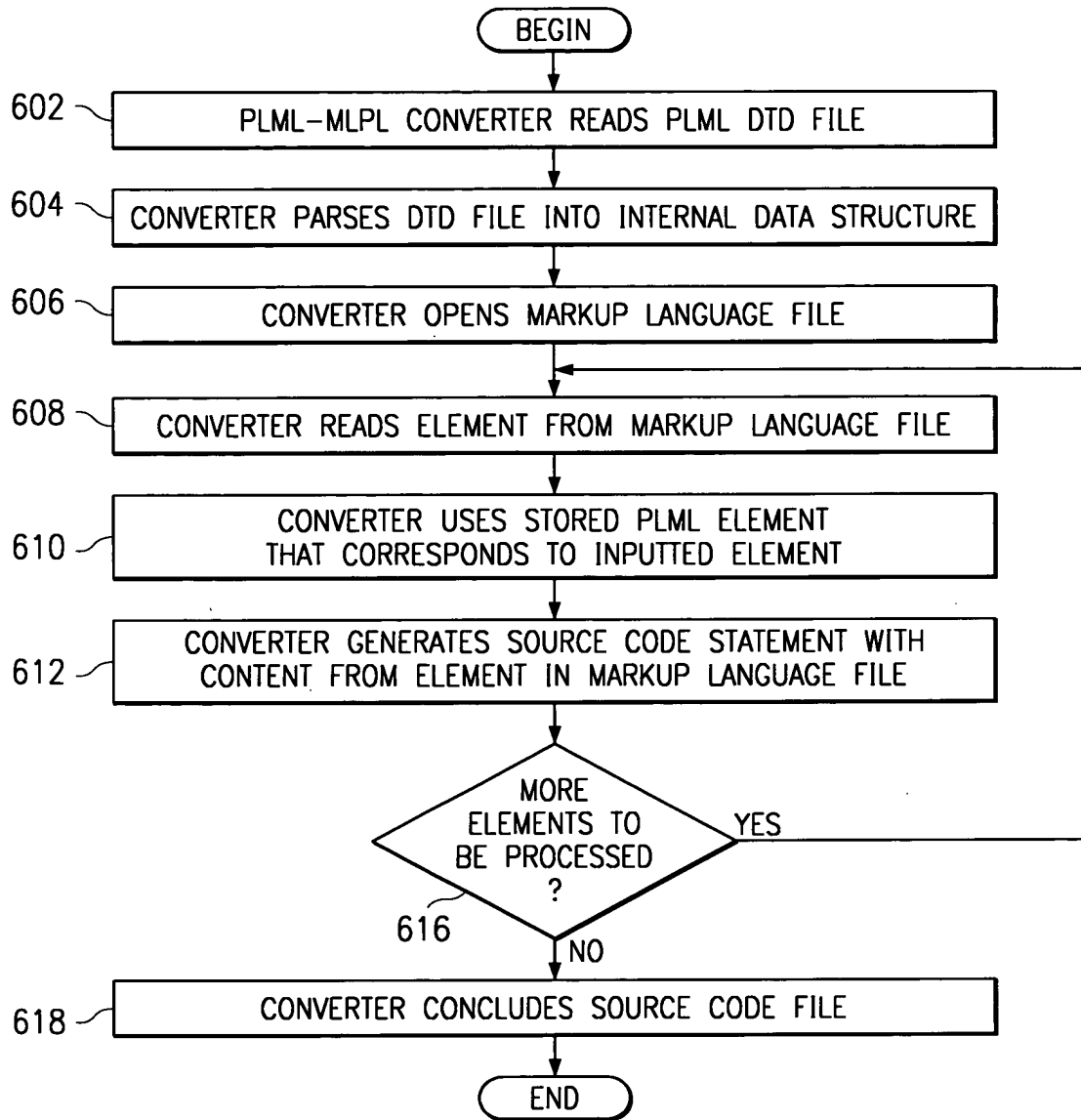


FIG. 6

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702 { <! ENTITY % base_content_model'(functionA | functionB)*'>

704 { <! ELEMENT plml % base_content_model;>

706 { <! ELEMENT functionA EMPTY>
<! ATTLIST functionA arg1 CDATA #REQUIRED
arg2 CDATA #REQUIRED
>

FIG. 7

708 { <! ELEMENT functionB EMPTY>
<! ATTLIST functionB arg1 CDATA #REQUIRED
>
<! -- End of DTD for Programming Language Markup Language-->

800 { 802 { main programA () {
integer temp;
initProg ();
804 { temp=functionA(5,7);
806 { temp=functionB(25);
}

FIG. 8

900 { 902 { <? plml version = "1.0"?>
<! DOCTYPE plml SYSTEM "plml.dtd">
904 { <plml>
906 { <! -- main programA () { ---->
<! -- integer temp; ---->
<! -- initProg (); ---->
908 { <functionA arg1="5"arg2="7" />
910 { <functionB arg1="25" />
912 { <! -- } ---->
914 { </ plml>

FIG. 9A

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920 { 922 { <? plml version = "1.0"?>
 <! DOCTYPE plml SYSTEM "plml.dtd">
 924 { <plml>
 926 { <functionA arg1="5"arg2="7" />
 928 { <functionB arg1="25" />
 930 { </plml>

FIG. 9B

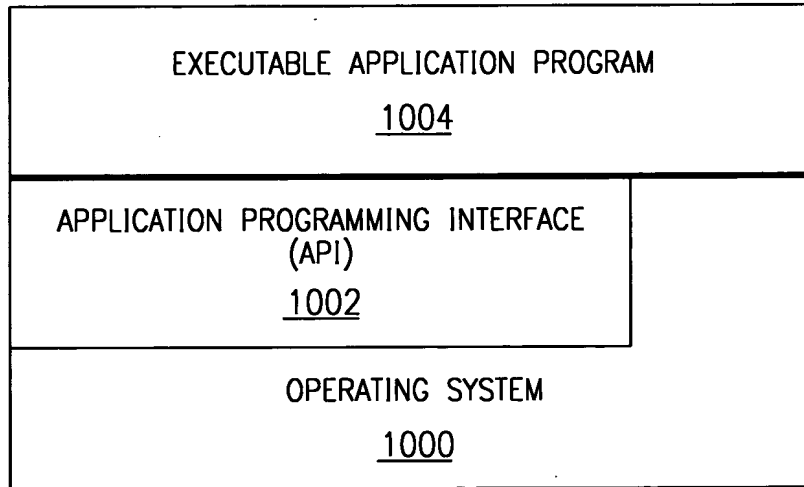


FIG. 10A

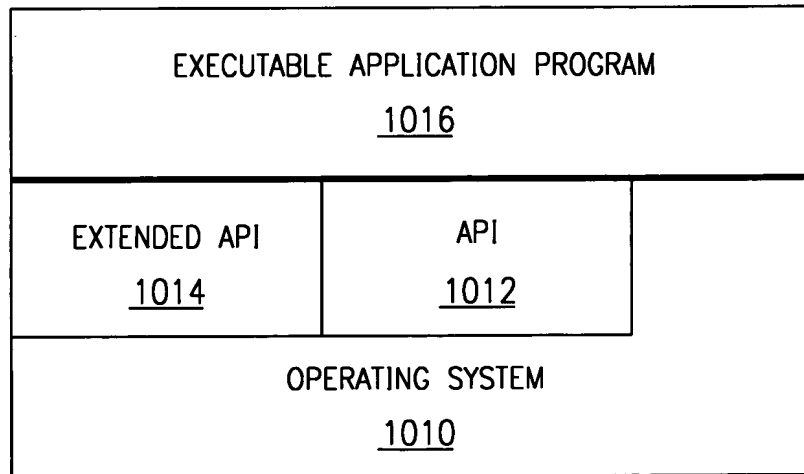


FIG. 10B

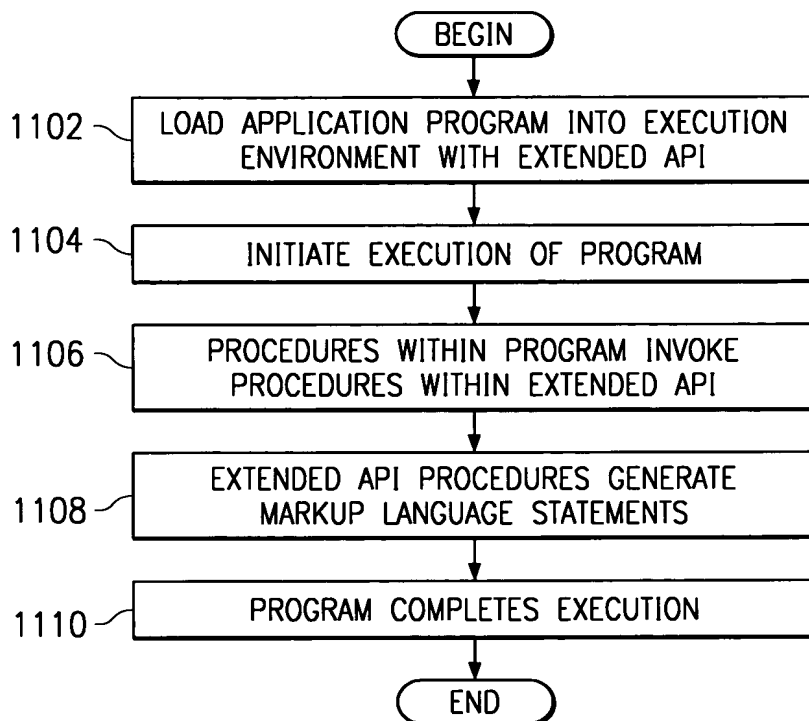


FIG. 11

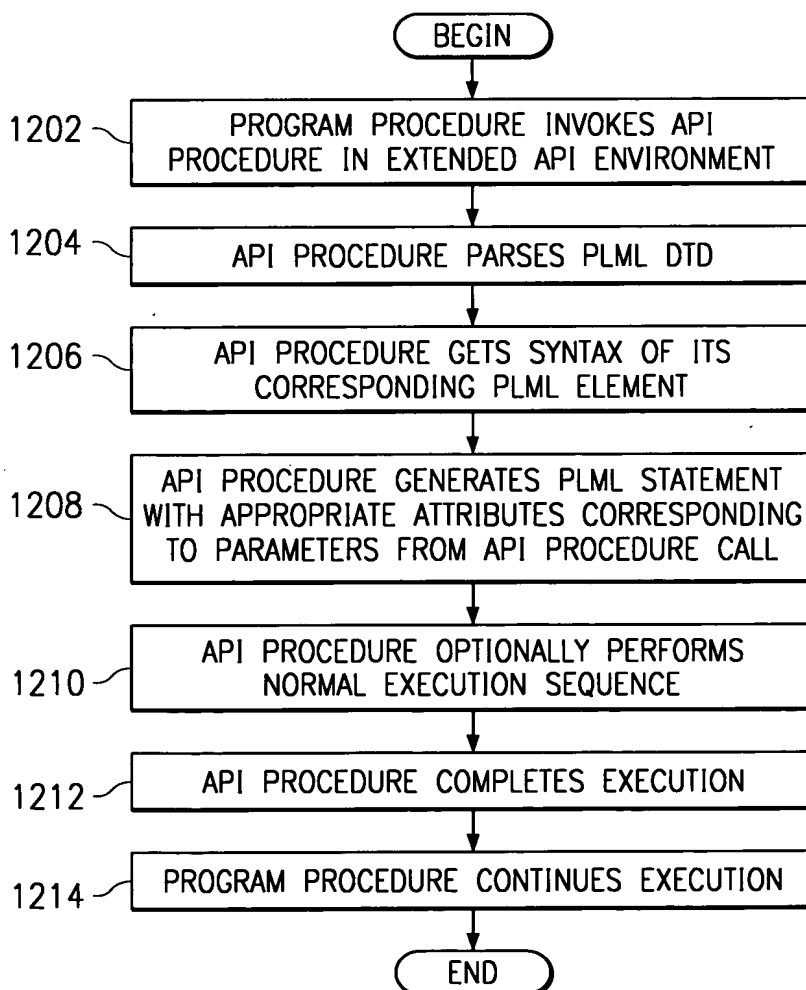


FIG. 12

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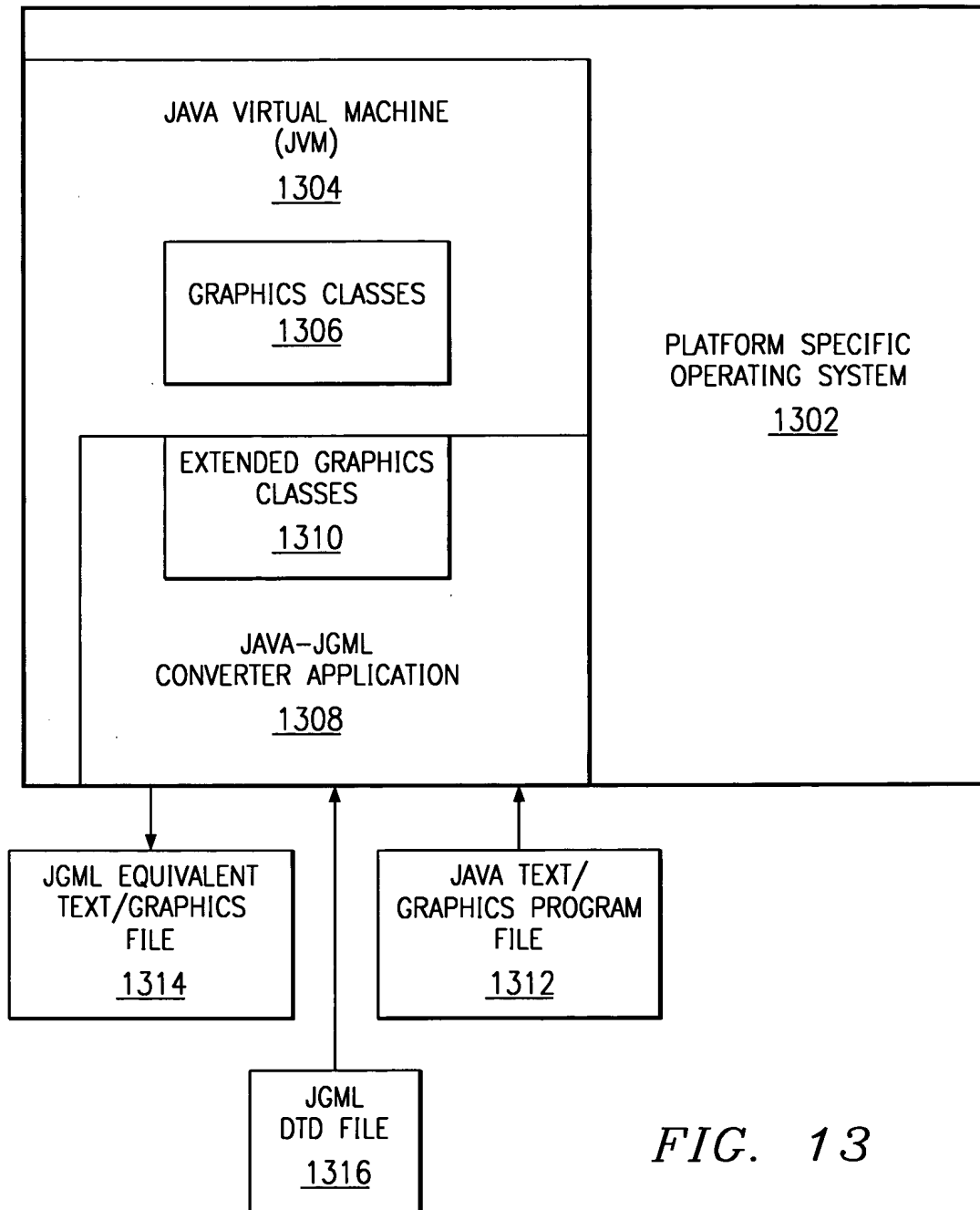


FIG. 13

```

1402 { public class JGML Graphics extends Graphics
      public void drawLine (int x1, int y1, int x2, int y2)
      {
1406 { Analyze JGML DTD for "drawLine" syntax
1408 { Generate JGML output statement with "drawLine" syntax and current parameters
1410 { printLine ("<drawLine x1=\\" + x1 + "\\" y1=\\" + y1 + "\\" x2=\\" + x2
      + "\\" y2=\\" + y2 + "\\"/>");
      }
1400 }
1404 }

1412 { public void clearRect(int x, int y, int width, int height)
      {
1412 { Analyze JGML DTD for "clearRect" syntax
      { Generate JGML output statement with "clearRect" syntax and current parameters
      { printLine (
        <clearRect x=\\" + x + "\\" y=\\" + y + "\\" width=\\" + width + "\\" height=\\" + height + "\\"/>;
      }
      }

```

FIG. 14

<!-- Java Graphics Markup Language (JGML) Document Type Definition (DTD) -->

<!ENTITY % base_content_model

'(copyArea | drawLine | fillRect | drawRect | clearRect |
drawRoundRect | fillRoundRect | draw3Drect | fill3Drect |
drawOval | fillOval | drawArc | fillArc | drawPolyline |
drawPolygon | fillPolygon | drawString | drawChars |
drawBytes | drawImage | dispose | finalize | clipRect |
setClip | setColor | setPaintMode | translate | setXORMode |
setFont)*'

>

<!ELEMENT jgml %base_content_model;>

<!ELEMENT copyArea EMPTY>

<!ATTLIST

| | | | |
|----------|--------|-------|-----------|
| copyArea | x | CDATA | #REQUIRED |
| | y | CDATA | #REQUIRED |
| | width | CDATA | #REQUIRED |
| | height | CDATA | #REQUIRED |
| | dx | CDATA | #REQUIRED |
| | dy | CDATA | #REQUIRED |

>

<!ELEMENT drawLine EMPTY>

<!ATTLIST

| | | | |
|----------|----|-------|-----------|
| drawLine | x1 | CDATA | #REQUIRED |
| | y1 | CDATA | #REQUIRED |
| | x2 | CDATA | #REQUIRED |
| | y2 | CDATA | #REQUIRED |

>

<!ELEMENT fillRect EMPTY>

<!ATTLIST

| | | | |
|----------|--------|-------|-----------|
| fillRect | x | CDATA | #REQUIRED |
| | y | CDATA | #REQUIRED |
| | width | CDATA | #REQUIRED |
| | height | CDATA | #REQUIRED |

>

<!ELEMENT drawRect EMPTY>

<!ATTLIST

| | | | |
|----------|--------|-------|-----------|
| drawRect | x | CDATA | #REQUIRED |
| | y | CDATA | #REQUIRED |
| | width | CDATA | #REQUIRED |
| | height | CDATA | #REQUIRED |

>

<!ELEMENT clearRect EMPTY>

<!ATTLIST

| | | | |
|-----------|--------|-------|-----------|
| clearRect | x | CDATA | #REQUIRED |
| | y | CDATA | #REQUIRED |
| | width | CDATA | #REQUIRED |
| | height | CDATA | #REQUIRED |

>

FIG. 15A

APPROVED	O.G. FIG.	
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<!ELEMENT drawRoundRect	EMPTY>		
<!ATTLIST			
drawRoundRect	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	arcWidth	CDATA	#REQUIRED
	arcHeight	CDATA	#REQUIRED
>			
<!ELEMENT fillRoundRect	EMPTY>		
<!ATTLIST			
fillRoundRect	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	arcWidth	CDATA	#REQUIRED
	arcHeight	CDATA	#REQUIRED
>			
<!ELEMENT draw3DRect	EMPTY>		
<!ATTLIST			
draw3dRect	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	raised	CDATA	#REQUIRED
>			
<!ELEMENT fill3DRect	EMPTY>		
<!ATTLIST			
fill3DRect	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	raised	CDATA	#REQUIRED
>			
<!ELEMENT drawOval	EMPTY>		
<!ATTLIST			
drawOval	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
>			
<!ELEMENT fillOval	EMPTY>		
<!ATTLIST			
fillOval	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
>			

FIG. 15B

APPROVED	O.G. FIG.	
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<!ELEMENT drawArc	EMPTY>		
<!ATTLIST			
drawArc	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	startAngle	CDATA	#REQUIRED
	arcAngle	CDATA	#REQUIRED
>			
<!ELEMENT fillArc	EMPTY>		
<!ATTLIST			
fillArc	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
	startAngle	CDATA	#REQUIRED
	arcAngle	CDATA	#REQUIRED
>			
<!ELEMENT drawPolyLine	EMPTY>		
<!ATTLIST			
drawPolyLine	xPoints	CDATA	#REQUIRED
	yPoints	CDATA	#REQUIRED
	nPoints	CDATA	#REQUIRED
>			
<!ELEMENT drawPolygon	EMPTY>		
<!ATTLIST			
drawPolygon	xPoints	CDATA	#IMPLIED
	yPoints	CDATA	#IMPLIED
	nPoints	CDATA	#IMPLIED
	p	CDATA	#IMPLIED
>			
<!ELEMENT fillPolygon	EMPTY>		
<!ATTLIST			
fillPolygon	xPoints	CDATA	#IMPLIED
	yPoints	CDATA	#IMPLIED
	nPoints	CDATA	#IMPLIED
	Polygon	CDATA	#IMPLIED
>			
<!ELEMENT drawString	EMPTY>		
<!ATTLIST			
drawString	str	CDATA	#REQUIRED
	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
>			

FIG. 15C

APPROVED	O.G. FIG.	
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<!ELEMENT drawChars	EMPTY>		
<!ATTLIST			
drawChars	data	CDATA	#REQUIRED
	offset	CDATA	#REQUIRED
	length	CDATA	#REQUIRED
	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
>			
<!ELEMENT drawBytes	EMPTY>		
<!ATTLIST			
drawBytes	offset	CDATA	#REQUIRED
	length	CDATA	#REQUIRED
	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
>			
<!ELEMENT drawImage	EMPTY>		
<!ATTLIST			
drawImage	img	CDATA	#REQUIRED
	x	CDATA	#IMPLIED
	y	CDATA	#IMPLIED
	width	CDATA	#IMPLIED
	height	CDATA	#IMPLIED
	dx1	CDATA	#IMPLIED
	dy1	CDATA	#IMPLIED
	dx2	CDATA	#IMPLIED
	dy2	CDATA	#IMPLIED
	sx1	CDATA	#IMPLIED
	sy1	CDATA	#IMPLIED
	sx2	CDATA	#IMPLIED
	sy2	CDATA	#IMPLIED
	bgcolor	CDATA	#IMPLIED
	observer	CDATA	#REQUIRED
>			
<!ELEMENT dispose	EMPTY>		
<!ELEMENT finalize	EMPTY>		
<!ELEMENT clipRect	EMPTY>		
<!ATTLIST			
clipRect	x	CDATA	#REQUIRED
	y	CDATA	#REQUIRED
	width	CDATA	#REQUIRED
	height	CDATA	#REQUIRED
>			

FIG. 15D

APPROVED	O.G. FIG.	
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```

<!ELEMENT setClip          EMPTY>
<!ATTLIST
    setClip                x                CDATA        #IMPLIED
                           y                CDATA        #IMPLIED
                           width            CDATA        #IMPLIED
                           height          CDATA        #IMPLIED
                           clip             CDATA        #IMPLIED
>
<!ELEMENT setColor         EMPTY>
<!ATTLIST
    setColor              color            CDATA        #REQUIRED
<!ELEMENT setPaintmode    EMPTY>
<!ELEMENT translate       EMPTY>
<!ATTLIST
    translate             x                CDATA        #REQUIRED
                           y                CDATA        #REQUIRED
>
<!ELEMENT setXORMode       EMPTY>
<!ATTLIST
    setXORMode            c1              CDATA        #REQUIRED
>
<!ELEMENT setFont         EMPTY>
<!ATTLIST
    setFont               font            CDATA        #REQUIRED
>
<!-- End of DTD for Java Graphics Markup Language -->

```

FIG. 15E

APPROVED	O.G. FIG.	
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- clearRect (int, int, int, int) ,
Clears the specified rectangle by filling it with the background color of the current drawing surface.
- clipRect (int, int, int, int)
Intersects the current clip with the specified rectangle.
- copyArea (int, int, int, int, int, int)
Copies an area of the component by a distance specified by dx and dy.
- create ()
Creates a new Graphics object that is a copy of this Graphics object.
- create (int, int, int int)
Creates a new Graphics object based on this Graphics object, but with a new translation and clip area.
- dispose ()
Disposes of this graphics context and releases any system resources that it is using.
- draw3Drect (int, int, int, int, boolean)
Draws a 3-D highlighted outline of the specified rectangle.
- drawArc (int, int, int, int, int, int)
Draws the outline of a circular or elliptical arc covering the specified rectangle.
- drawBytes (byte[], int, int, int, int)
Draws the text given by the specified byte array, using this graphics context's current font and color.
- drawChars (char[], int, int, int, int)
Draws the text given by the specified character array, using this graphics context's current font and color.
- drawImage (Image, int, int, Color, ImageObserver)
Draws as much of the specified image as is currently available.
- drawImage (Image, int, int, int, int, Color, ImageObserver)
Draws as much of the specified image as has already been scaled to fit inside the specified rectangle.
- drawImage (Image, int, int, int, int, ImageObserver)
Draws as much of the specified image as has already been scaled to fit inside the specified rectangle.
- drawImage (Image, int, int, int, int, int, int, int, int, Color, ImageObserver)
Draws as much of the specified area of the specified image as is currently available, scaling it on the fly to fit inside the specified area of the destination drawable surface.
- drawimage (Image, int, int, int, int, int, int, int, int, ImageObserver)
Draws as much of the specified area of the specified image as is currently available, scaling it on the fly to fit inside the specified area of the destination drawable surface.

FIG. 16A

APPROVED	O.G. FIG.	
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- drawLine (int, int, int, int)
Draws a line, using the current color, between the points (x1, y1) and (x2, y2) in this graphics context" coordinate system.
- drawOval (int, int, int, int)
Draws the outline of an oval.
- drawPolygon (int[], int[], int)
Draws a closed polygon defined by arrays of x and y coordinates.
- drawPolygon (Polygon)
Draws the outline of a polygon defined by the specified Polygon object.
- drawPolyline (int[], int[], int)
Draws a sequence of connected lines defined by arrays of x and y coordinates.
- drawRect (int, int, int, int)
Draws the outline of the specified rectangle.
- drawRoundRect (int, int, int, int, int, int)
Draws an outlined round-cornered rectangle using this graphics context's current color.
- drawString (String, int, int)
Draws the text given by the specified string, using this graphics context's current font and color.
- fill3Drec (int, int, int, boolean)
Paints a 3-D highlighted rectangle filled with the current color.
- fillArc (int, int, int, int, int, int)
Fills a circular or elliptical arc covering the specified rectangle.
- fillOval (int, int, int, int)
Fills an oval bounded by the specified rectangle with the current color.
- fillPolygon (int[], int[], int)
Fills a closed polygon defined by arrays of x and y coordinates.
- fillPolygon (Polygon)
Fills the polygon defined by the specified Polygon object with the graphics context's current color.
- fillRect (int, int, int, int)
Fills the specified rectangle.
- fillRoundRect (int, int, int, int, int, int)
Fills the specified rounded corner rectangle with the current color.
- finalize ()
Disposes of this graphics context once it is no longer referenced.
- getClip ()
Gets the current clipping area.

FIG. 16B

- getClipBounds ()
Returns the bounding rectangle of the current clipping area.
- getClipRect ()
Deprecated.
- getColor ()
Gets this graphics context's current color.
- getFont ()
Gets the current font.
- getFontMetrics ()
Gets the font metrics of the current font.
- getFontMetrics (Font)
Gets the font metrics for the specified font.
- setClip (int, int, int, int)
Sets the current clip to the rectangle specified by the given coordinates.
- setClip (Shape)
Sets the current clipping area to an arbitrary clip shape.
- setColor (Color)
Sets this graphics context's current
- setFont (Font)
Sets this graphics context's font to the specified font.
- setPointMode ()
Sets the point mode of this graphics context to overwrite the destination with this graphics context's current color.
- setXORMode (Color)
Sets the point mode of this graphics context to alternate between this graphics context's current color and the new specified color.
- toString ()
Returns a String object representing this Graphics object's value.
- translate (int, int)
Translates the origin of the graphics context to the point (x, y) in the current coordinate system.

FIG. 16C

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```

1700 {
  1702 { <! ELEMENT drawLine EMPTY>
    1706 {
      <! ATTLIST drawLine x1 CDATA #REQUIRED
                        x2 CDATA #REQUIRED
                        y1 CDATA #REQUIRED
                        y2 CDATA #REQUIRED
    }
  }
  1704 { <! ELEMENT clearRect EMPTY>
    1708 {
      <! ATTLIST clearRect x CDATA #REQUIRED
                        y CDATA #REQUIRED
                        width CDATA #REQUIRED
                        height CDATA #REQUIRED
    }
  }
}

```

FIG. 17

```

1800 {
  1802 ~ drawLine (23, 43, 50, 60);
  1804 ~ drawLine (50, 60, 27, 80);
  1806 ~ clearRect (0, 0, 10, 10);
}

```

FIG. 18

```

1900 {
  <? xml version="1.0" ?>
  <! DOCTYPE jgml SYSTEM "jgml.dtd" >
  < jgml >
    1902 ~ < drawLine x1="23" y1="43" x2="50" y2="60" />
    1904 ~ < drawLine x1="50" y1="60" x2="27" y2="80" />
    1906 ~ < clearRect x="0" y="0" width="10" height="10" />
  < /jgml >
}

```

FIG. 19